

AMENDMENT TO THE CLAIMS:

1-37. (Canceled)

38. (Currently Amended) A method for producing a coating for absorption of neutrons generated in nuclear reaction of radioactive materials on a shielding element at least partly, the method comprising:

providing a shielding element having a base material and appropriately predefined surfaces;

providing a dispersion bath comprising a first substance having a high neutron capture cross-section and ana second substance being electrolytically precipitable metallic substance wherein the first substance having the high neutron-capture-cross-section is in a form of an electrically conductive compound;

submerging said shielding element at least partly with appropriately predefined surfaces to be coated into said dispersion bath;

intermittently generating a relative movement between the respective surface to be coated and the dispersion bath during the coating process; and

removing the shielding element from said dispersion bath.

39. (Currently Amended) The method as set forth in claim 38, wherein the second substance electrolytically precipitable metallic substance is one element of the group that consists of nickel, cadmium and copper.

40. (Currently Amended) The method as set forth in claim 38, wherein the first substance with the high neutron-capture-cross-section is at least one of the elements of the group that consists of boron, gadolinium, cadmium, samarium, europlum and dysprosium.

41. (Currently Amended) The method as set forth in claim 40, wherein the first substance having the high neutron-capture-cross-section is an isotope having an augmented neutron capture cross-section.

42. (Currently Amended) The method as set forth in claim 38, wherein the electrically conductive compound of the element with first substance the high neutron-capture-cross-section is a metallic compound.

43. (Currently Amended) The method as set forth in claim 42, wherein the electrically conductive compound of the element with the high neutron capture cross-section first substance is metal boride.

44. (Currently Amended) The method as set forth in claim 38, wherein the relative movement is generated by moving the surface to be coated.

45. (Previously Added) The method as set forth in claim 38, wherein the relative movement is generated by blowing in a gas and/or by introducing ultrasound waves.

46. (Previously Added) The method as set forth in claim 38, wherein the dispersion bath is thoroughly mixed at least periodically during the coating process.

47. (Previously Added) The method as set forth in claim 38, wherein the process is performed in a ceramic or glass vessel.

48. (Currently Amended) A neutron absorption device, comprising:
an inorganic base material; and
a layer disposed at said inorganic base material, said layer being composed of a first substance having a high neutron capture cross-section of more than 20% by volume being embedded in a second substance being an electrolytically precipitable metallic substance.

49. (Currently Amended) The neutron adsorption device of claim 48, wherein said first substance having said high neutron capture cross-section is an electrically conductive compound.

50. (Currently Amended) The neutron adsorption device of claim 49, wherein said electrically conductive compound of the first substance is a metallic compound.

51. (Currently Amended) The neutron adsorption device of claim 50, wherein the electrically conductive compound of the element with the high neutron capture cross-section of the first substance is metal boride.

52. (Currently Amended) The neutron adsorption device of claim 48, wherein said first substance having said high neutron capture cross-section is an element selected from the group consisting of boron, gadolinium, cadmium, samarium, europium, and dysprosium.

53. (Currently Amended) The neutron adsorption device of claim 52, wherein said first substance having said ~~high neutron capture cross-section~~ is an isotope having an augmented neutron capture cross-section.

54. (Currently Amended) The neutron adsorption device of claim 48, wherein said second substance electrolytically precipitable metallic substance is an element selected from the group consisting of nickel, cadmium, and copper.

55. (Previously Added) The neutron adsorption device of claim 48, wherein a thickness of said layer is up to 800 micrometers.

56. (Currently Amended) The neutron adsorption device of claim 48, wherein said first substance having ~~said high neutron capture cross-section~~ is embedded in a metal matrix.

57. (Currently Amended) The neutron adsorption device of claim 56, wherein a concentration of said first substance having ~~said high neutron capture cross-section~~ embedded in said metal matrix is up to about 60% by volume.

58. (Previously Added) The neutron adsorption device of claim 48, wherein said inorganic base material comprises a shielding element having a predefined surface.